

## II. AMENDMENTS TO THE CLAIMS

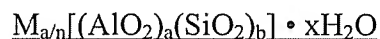
This listing of claims will replace all prior versions, and listings, of claims in the application:

### CLAIMS:

1 – 32. (Cancelled).

33. (Currently Amended) A wellbore spacer composition comprising:

a zeolite present from about 60 to 70% by weight of dry materials, ~~selected from the group consisting of clinoptilolite, analcime, bikitaite, brewsterite, chabazite, faujasite, harmotome, heulandite, laumontite, mesolite, natrolite, paulingite, phillipsite, scolecite, stellerite, stilbite, and thomsonite~~ the zeolite being represented by the formula:



where

M represents one or more cations selected from the group consisting of Na, K, Mg, Ca, Sr, Li, Ba, NH<sub>4</sub>, CH<sub>3</sub>NH<sub>3</sub>, (CH<sub>3</sub>)<sub>3</sub>NH, (CH<sub>3</sub>)<sub>4</sub>N, Ga, Ge and P;

n represents the cation valence;

the ratio of b:a is in a range of from greater than or equal to 1 to less than or equal to 5; and

x represents the number of moles of water entrained into the zeolite framework;

a polymeric viscosifier or fluid loss control agent present from about 1 to 3% by weight of dry materials selected from the group consisting of hydroxyethylcellulose, cellulose, carboxyethylcellulose, carboxymethylcellulose, carboxymethylhydroxyethylcellulose, hydroxypropylcellulose, methylhydroxypropylcellulose, methylcellulose, ethylcellulose, propylcellulose, ethylcarboxymethylcellulose, methylethylcellulose, hydroxypropylmethylcellulose, starch, guar gum, locust bean gum, tara, konjak, tamarind, karaya gum, welan gum, xanthan gum, galactomannan gums, succinoglycan gums, scleroglucan gums, tragacanth gum, arabic gum, ghatti gum, tamarind gum, carrageenan, carboxymethyl guar, hydroxypropyl guar, carboxymethylhydroxypropyl guar, polyacrylate, polymethacrylate,

polyacrylamide, maleic anhydride, methylvinyl ether copolymers, polyvinyl alcohol, and polyvinylpyrrolidone; and  
a carrier fluid.

Claims 34 – 39. (Cancelled).

40. (Previously Presented) The wellbore spacer composition of claim 33, wherein the zeolite is selected from the group consisting of analcime, chabazite, clinoptilolite, heulandite, and natrolite.

Claims 41 – 42. (Cancelled).

43. (Previously Presented) The wellbore spacer composition of claim 33, wherein the carrier fluid comprises a fluid selected from the group consisting of an aqueous fluid, hydrocarbon-based liquids, emulsions, acids and mixtures thereof.

44. (Previously Presented) The wellbore spacer composition of claim 43, wherein the carrier fluid comprises water.

45. (Currently Amended) The wellbore spacer composition of claim 33, wherein the carrier fluid comprises from about 45 to 95% by volume of the fluid composition.

46. (Currently Amended) The wellbore spacer composition of claim 33, wherein the carrier fluid comprises from about 65 to 75% by volume of the fluid composition.

47. (Previously Presented) The wellbore spacer composition of claim 33 further comprising an additive selected from the group consisting of diatomaceous earth and clay.

Claim 48. (Cancelled).

49. (Previously Presented) The wellbore spacer composition of claim 47 wherein the clay is selected from the group consisting of kaolinites, montmorillonite, bentonite, hydrous micas, attapulgite, sepiolite, and laponite.

Claims 50 – 52. (Cancelled).

53. (Previously Presented) The wellbore spacer composition of claim 33, wherein the polymer is selected from the group consisting of hydroxyethylcellulose, carboxymethylhydroxyethylcellulose and guar gum.

54. (Previously Presented) The wellbore spacer composition of claim 33, wherein the polymer comprises hydroxyethylcellulose.

55. (Previously Presented) The wellbore spacer composition of claim 33, wherein the polymer is selected from the group consisting of welan gum, xanthan gum, galactomannan gums, succinoglycan gums, scleroglucan gums, and cellulose and its derivatives.

Claims 56 – 57. (Cancelled).

58. (Previously Presented) The wellbore spacer composition of claim 33 further comprising a dispersant present from about 1 to 18% by weight of dry materials selected from the group consisting of sulfonated styrene maleic anhydride copolymer, sulfonated vinyltoluene maleic anhydride copolymer, sodium naphthalene sulfonate condensed with formaldehyde, sulfonated acetone condensed with formaldehyde, lignosulfonates and interpolymers of acrylic acid, allyloxybenzene sulfonate, allyl sulfonate and non-ionic monomers.

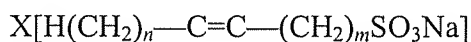
Claims 59 – 60. (Cancelled).

61. (Previously Presented) The wellbore spacer composition of claim 33, further comprising a surfactant selected from the group consisting of nonylphenol ethoxylates, alcohol ethoxylates,

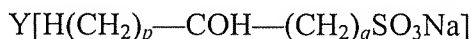
sugar lipids,  $\alpha$ -olefinsulfonates, alkylpolyglycosides, alcohol sulfates, salts of ethoxylated alcohol sulfates, alkyl amidopropyl dimethylamine oxides and alkene amidopropyl dimethylamine oxides.

62. (Previously Presented) The wellbore spacer composition of claim 61, wherein the surfactant is selected from the group consisting of:

- (a) a sodium salt of  $\alpha$ -olefinic sulfonic acid which is a mixture of compounds of the formulas:



and



wherein:

n and m are individually integers in the range of from about 6 to about 16;  
p and q are individually integers in the range of from about 7 to about 17; and  
X and Y are fractions with the sum of X and Y being 1;

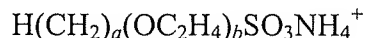
- (b) a composition having the formula:



wherein:

a is an integer in the range of from about 6 to about 10;

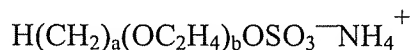
- (c) oxyalkylated sulfonate;  
(d) an alcohol ether sulfonate of the formula:



wherein:

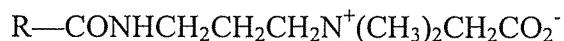
a is an integer in the range of from about 6 to about 10; and  
b is an integer in the range of from about 3 to about 10;

- (e) cocoamine betaine;  
(f) an ethoxylated alcohol ether sulfate of the formula:



wherein a is an integer in the range of from about 6 to about 10 and b is an integer in the range of from about 3 to about 10;

(g) an alkyl or alkene amidopropyl betaine having the formula:



wherein R is a radical selected from the group of decyl, cocoyl, lauryl, cetyl and oleyl;  
and

(h) an alkyl or alkene amidopropyl dimethylamine oxide surfactant having the formula:



wherein R is a radical selected from the group of decyl, cocoyl, lauryl, cetyl and oleyl.

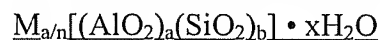
Claims 63 – 64. (Cancelled).

65. (Previously Presented) The wellbore spacer composition of claim 33 further comprising a weighting material selected from the group consisting of barite, hematite, manganese tetraoxide, ilmenite and calcium carbonate.

Claims 66 – 105. (Cancelled).

106. (Currently Amended) A wellbore spacer composition comprising:

a zeolite present from about 60 to 70% by weight of dry materials, ~~selected from the group consisting of clinoptilolite, analcime, bikitaite, brewsterite, chabazite, faujasite, harmotome, heulandite, laumontite, mesolite, natrolite, paulingite, phillipsite, scolecite, stellerite, stilbite, and thomsonite~~ the zeolite being represented by the formula:



where

M represents one or more cations selected from the group consisting of Na, K, Mg, Ca, Sr, Li, Ba, NH<sub>4</sub>, CH<sub>3</sub>NH<sub>3</sub>, (CH<sub>3</sub>)<sub>3</sub>NH, (CH<sub>3</sub>)<sub>4</sub>N, Ga, Ge and P;

n represents the cation valence;

the ratio of b:a is in a range of from greater than or equal to 1 to less than or equal to 5; and

x represents the number of moles of water entrained into the zeolite framework;

a dispersant present from about 1 to 18% by weight of dry materials selected from the group consisting of sodium naphthalene sulfonate condensed with formaldehyde, sulfonated styrene maleic anhydride copolymer, sulfonated vinyltoluene maleic anhydride copolymer, sulfonated acetone condensed with formaldehyde, lignosulfonates and interpolymers of acrylic acid, allyloxybenzene sulfonate, allyl sulfonate and non-ionic monomers; and  
a carrier fluid.

Claims 107 – 109. (Cancelled).

110. (Previously Presented) The wellbore spacer composition of claim 106, wherein the zeolite is selected from the group consisting of analcime, chabazite, clinoptilolite, heulandite, and natrolite.

Claims 111 – 112. (Cancelled).

113. (Previously Presented) The wellbore spacer composition of claim 106, wherein the carrier fluid comprises a fluid selected from the group consisting of an aqueous fluid, hydrocarbon-based liquids, emulsions, acids and mixtures thereof.

114. (Previously Presented) The wellbore spacer composition of claim 106, wherein the carrier fluid comprises water.

115. (Previously Presented) The wellbore spacer composition of claim 106, further comprising an additive selected from the group consisting of diatomaceous earth and clay.

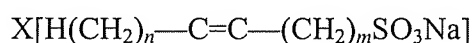
116. (Previously Presented) The wellbore spacer composition of claim 115 wherein the clay is selected from the group consisting of kaolinites, montmorillonite, bentonite, hydrous micas, attapulgite, sepiolite, and laponite.

117. (Previously Presented) The wellbore spacer composition of claim 106 further comprising a polymeric viscosifier or fluid loss control agent present from about 1 to 3% by weight of dry materials selected from the group consisting of hydroxyethylcellulose, carboxymethylhydroxyethylcellulose, guar gum, welan gum, xanthan gum, galactomannan gums, succinoglycan gums, scleroglucan gums, and cellulose.

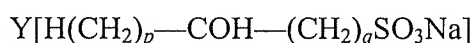
118. (Previously Presented) The wellbore spacer composition of claim 106 further comprising a surfactant selected from the group consisting of nonylphenol ethoxylates, alcohol ethoxylates, sugar lipids,  $\alpha$ -olefinsulfonates, alkylpolyglycosides, alcohol sulfates, salts of ethoxylated alcohol sulfates, alkyl amidopropyl dimethylamine oxides and alkene amidopropyl dimethylamine oxides.

119. (Previously Presented) The wellbore spacer composition of claim 118, wherein the surfactant is selected from the group consisting of:

- (a) a sodium salt of  $\alpha$ -olefinic sulfonic acid which is a mixture of compounds of the formulas:



and



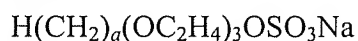
wherein:

n and m are individually integers in the range of from about 6 to about 16;

p and q are individually integers in the range of from about 7 to about 17; and

X and Y are fractions with the sum of X and Y being 1;

- (b) a composition having the formula:

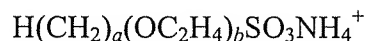


wherein:

a is an integer in the range of from about 6 to about 10;

(c) oxyalkylated sulfonate;

(d) an alcohol ether sulfonate of the formula:



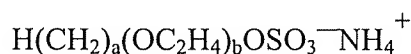
wherein:

a is an integer in the range of from about 6 to about 10; and

b is an integer in the range of from about 3 to about 10;

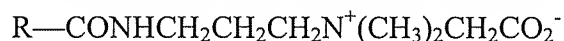
(e) cocoamine betaine;

(f) an ethoxylated alcohol ether sulfate of the formula:



wherein a is an integer in the range of from about 6 to about 10 and b is an integer in the range of from about 3 to about 10;

(g) an alkyl or alkene amidopropyl betaine having the formula:



wherein R is a radical selected from the group of decyl, cocoyl, lauryl, cetyl and oleyl;  
and

(h) an alkyl or alkene amidopropyl dimethylamine oxide surfactant having the formula:



wherein R is a radical selected from the group of decyl, cocoyl, lauryl, cetyl and oleyl.

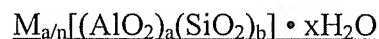
120. (Previously Presented) The wellbore spacer composition of claim 106 further comprising a weighting material selected from the group consisting of barite, hematite, manganese tetraoxide, ilmenite and calcium carbonate.

121. (Currently Amended) A wellbore spacer composition comprising:

a zeolite present from about 60 to 70% by weight of dry materials, ~~selected from the group consisting of clinoptilolite, analcime, bikitaite, brewsterite, chabazite, faujasite,~~



~~harmotome, heulandite, laumontite, mesolite, natrolite, paulingite, phillipsite, scolecite, stellerite, stilbite, and thomsonite~~ the zeolite being represented by the formula:



where

M represents one or more cations selected from the group consisting of Na, K, Mg, Ca, Sr, Li, Ba, NH<sub>4</sub>, CH<sub>3</sub>NH<sub>3</sub>, (CH<sub>3</sub>)<sub>3</sub>NH, (CH<sub>3</sub>)<sub>4</sub>N, Ga, Ge and P;

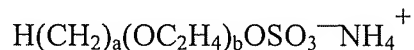
n represents the cation valence;

the ratio of b:a is in a range of from greater than or equal to 1 to less than or equal to 5; and

x represents the number of moles of water entrained into the zeolite framework;

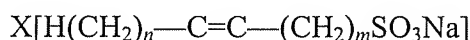
a surfactant selected from the group consisting of:

- (a) an ethoxylated alcohol ether sulfate of the formula:

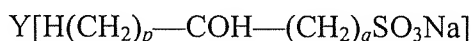


wherein a is an integer in the range of from about 6 to about 10 and b is an integer in the range of from about 3 to about 10;

- (b) a sodium salt of  $\alpha$ -olefinic sulfonic acid which is a mixture of compounds of the formulas:



and



wherein:

n and m are individually integers in the range of from about 6 to about 16;

p and q are individually integers in the range of from about 7 to about 17; and

X and Y are fractions with the sum of X and Y being 1;

- (c) a composition having the formula:

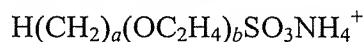


wherein:

a is an integer in the range of from about 6 to about 10;

- (d) oxyalkylated sulfonate;

- (e) an alcohol ether sulfonate of the formula:



wherein:

a is an integer in the range of from about 6 to about 10; and

b is an integer in the range of from about 3 to about 10;

- (f) cocoamine betaine;

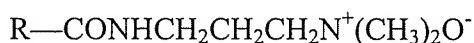
- (g) an alkyl or alkene amidopropyl betaine having the formula:



wherein R is a radical selected from the group of decyl, cocoyl, lauryl, cetyl and oleyl;

and

- (h) an alkyl or alkene amidopropyl dimethylamine oxide surfactant having the formula:



wherein R is a radical selected from the group of decyl, cocoyl, lauryl, cetyl and oleyl;

and

a carrier fluid.

Claims 122 – 124. (Cancelled).

125. (Previously Presented) The wellbore spacer composition of claim 121, wherein the zeolite is selected from the group consisting of analcime, chabazite, clinoptilolite, heulandite, and natrolite.

Claims 126 – 127. (Cancelled).

128. (Previously Presented) The wellbore spacer composition of claim 121, wherein the carrier fluid comprises a fluid selected from the group consisting of an aqueous fluid, hydrocarbon-based liquids, emulsions, acids and mixtures thereof.

129. (Previously Presented) The wellbore spacer composition of claim 121, wherein the carrier fluid comprises water.

130. (Previously Presented) The wellbore spacer composition of claim 121 further comprising an additive selected from the group consisting of diatomaceous earth and clay.

131. (Previously Presented) The wellbore spacer composition of claim 130 wherein the clay is selected from the group consisting of kaolinites, montmorillonite, bentonite, hydrous micas, attapulgite, sepiolite, and laponite.

132. (Previously Presented) The wellbore spacer composition of claim 121 further comprising a polymeric viscosifier or fluid loss control agent present from about 1 to 3% by weight of dry materials selected from the group consisting of hydroxyethylcellulose, carboxymethylhydroxyethylcellulose, guar gum, welan gum, xanthan gum, galactomannan gums, succinoglycan gums, scleroglucan gums, and cellulose.

Claim 133. (Cancelled).

134. (Previously Presented) The wellbore spacer composition of claim 121 further comprising a weighting material selected from the group consisting of barite, hematite, manganese tetraoxide, ilmenite and calcium carbonate.

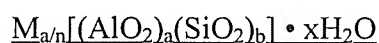
135. (Previously Presented) The wellbore spacer composition of claim 33, wherein the composition has a 300/3 ratio of from 2 to 6.

136. (Previously Presented) The wellbore spacer composition of claim 106, wherein the composition has a 300/3 ratio of from 2 to 6.

137. (Previously Presented) The wellbore spacer composition of claim 121, wherein the composition has a 300/3 ratio of from 2 to 6.

138. (Currently Amended) A system for treating a wellbore, comprising:  
 a first fluid disposed in a wellbore;  
 a second fluid disposed in the wellbore, the second fluid being incompatible with the first fluid; and  
 a wellbore spacer fluid disposed in the wellbore between the first fluid and the second fluid and preventing contact between the first fluid and the second fluid, the wellbore spacer fluid comprising:

a zeolite present from about 60 to 70% by weight of dry materials, ~~selected from the group consisting of clinoptilolite, analcime, bikitaite, brewsterite, chabazite, faujasite, harmotome, heulandite, laumontite, mesolite, natrolite, paulingite, phillipsite, scolecite, stellerite, stilbite, and thomsonite~~ the zeolite being represented by the formula:



where

M represents one or more cations selected from the group consisting of Na, K, Mg, Ca, Sr, Li, Ba, NH<sub>4</sub>, CH<sub>3</sub>NH<sub>3</sub>, (CH<sub>3</sub>)<sub>3</sub>NH, (CH<sub>3</sub>)<sub>4</sub>N, Ga, Ge and P;

n represents the cation valence;

the ratio of b:a is in a range of from greater than or equal to 1 to less than or equal to 5; and

x represents the number of moles of water entrained into the zeolite framework;

a polymeric viscosifier or fluid loss control agent selected from the group consisting of hydroxyethylcellulose, cellulose, carboxyethylcellulose, carboxymethylcellulose, carboxymethylhydroxyethylcellulose, hydroxypropylcellulose, methylhydroxypropylcellulose, methylcellulose, ethylcellulose, propylcellulose, ethylcarboxymethylcellulose, methylethylcellulose, hydroxypropylmethylcellulose, starch, guar gum, locust bean gum, tara, konjak, tamarind, karaya gum, welan gum, xanthan gum, galactomannan gums, succinoglycan gums, scleroglucan gums, tragacanth gum, arabic gum, ghatti gum, tamarind gum, carrageenan, carboxymethyl guar, hydroxypropyl guar, carboxymethylhydroxypropyl guar, polyacrylate, polymethacrylate,

polyacrylamide, maleic anhydride, methylvinyl ether copolymers, polyvinyl alcohol, and  
polyvinylpyrrolidone; and  
a carrier fluid.